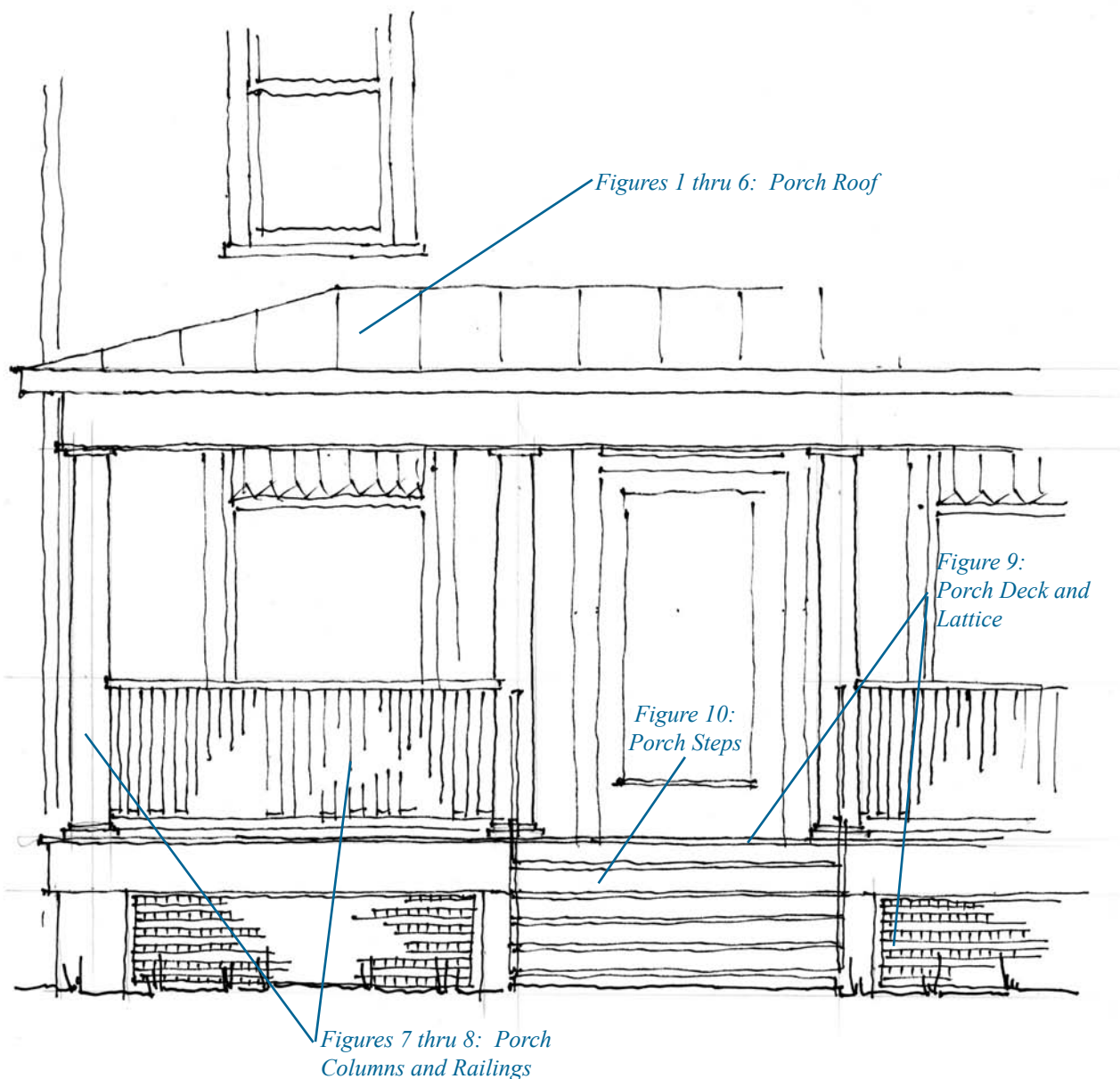


Porch Construction

Anatomy of a Porch

As porches regain their popularity, they are more often included as an essential amenity in new construction. Unfortunately, the construction of a new porch is rarely executed properly. This section dissects the components of a porch and shows how they can be properly constructed with readily available materials. The front porch is made up of four basic components; 1) roof, 2) *columns* and railings, 3) deck and lattice, and 4) steps.



Porch Roof

The porch roof usually has a shallow *pitch* of no greater than 4:12. A roof pitch less than 3:12 will require a metal or other special roofing system. The porch roof is either a *hipped* roof configuration (sloping up from its three exposed sides) or a monopitch configuration (shed roof sloping up from the front edge with vertical *gable* surfaces on its two remaining exposed sides).

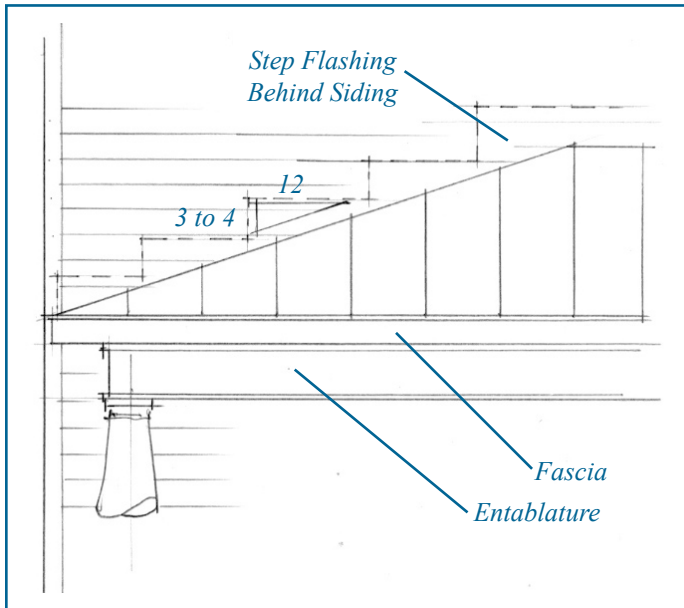


Figure 1: Front Elevation of a Hipped Porch Roof

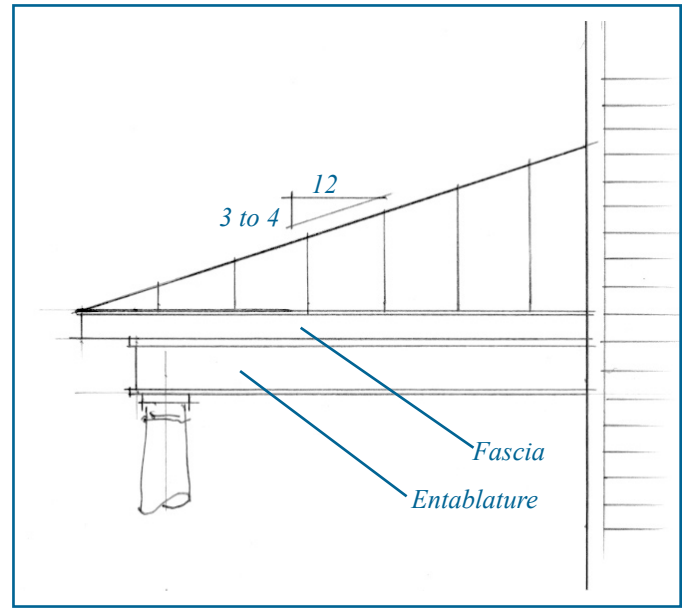


Figure 2: Side Elevation of a Hipped Porch Roof

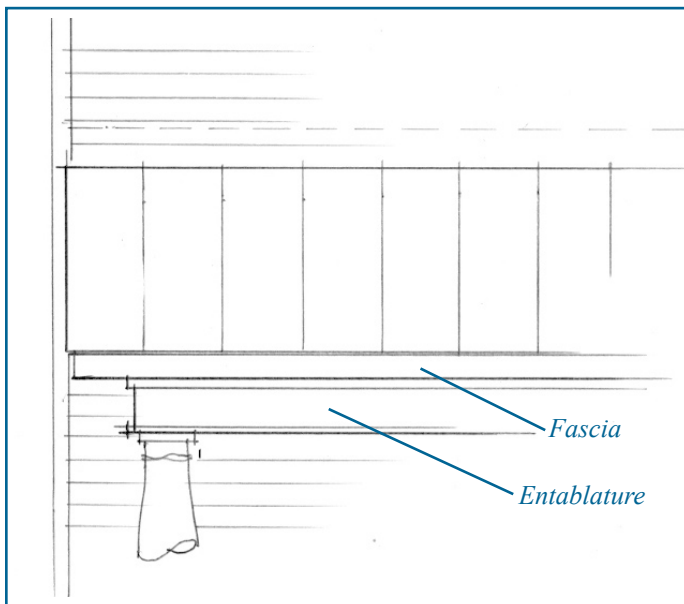


Figure 3: Front Elevation of a Shed Porch Roof

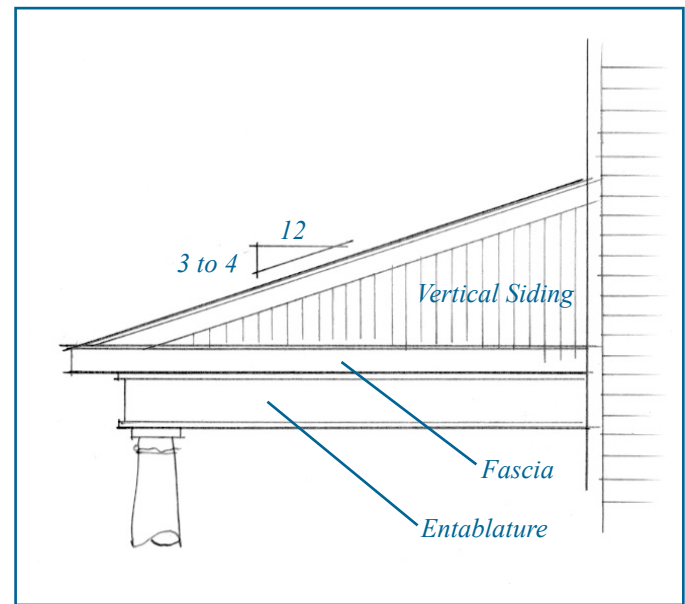


Figure 4: Side Elevation of a Shed Porch Roof

Figure 5: Porch Roof Structure

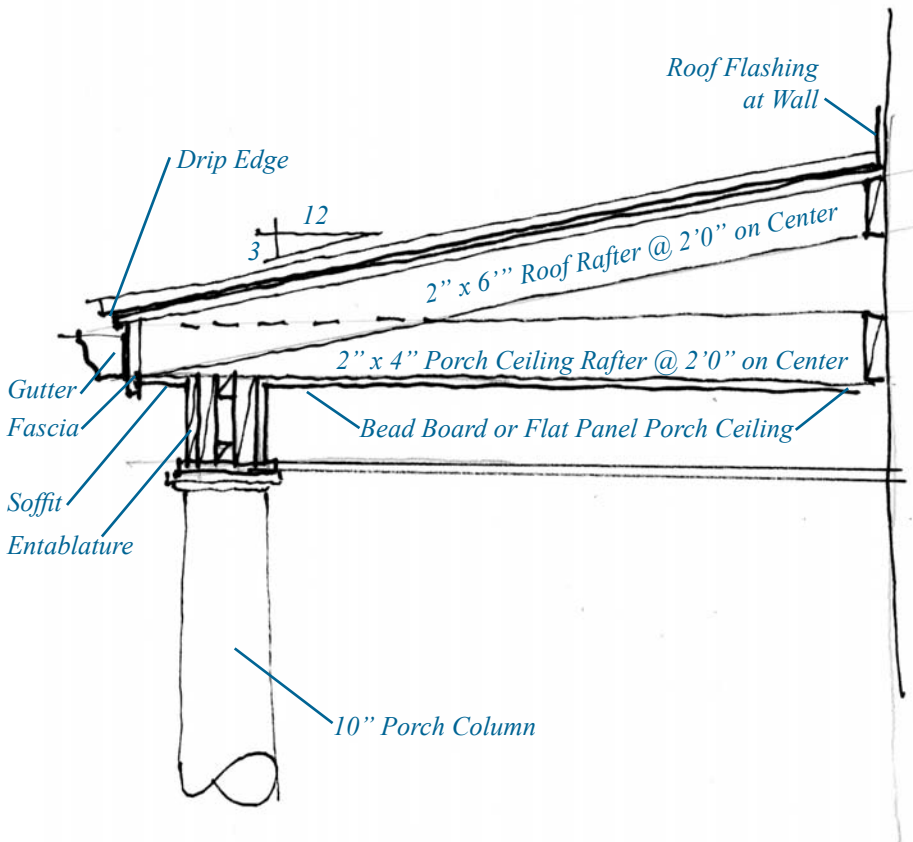
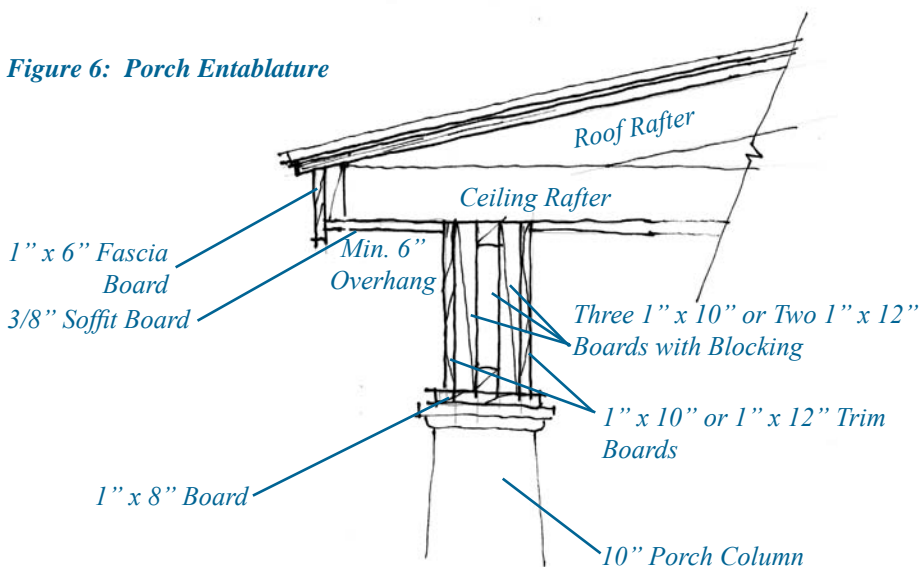


Figure 6: Porch Entablature

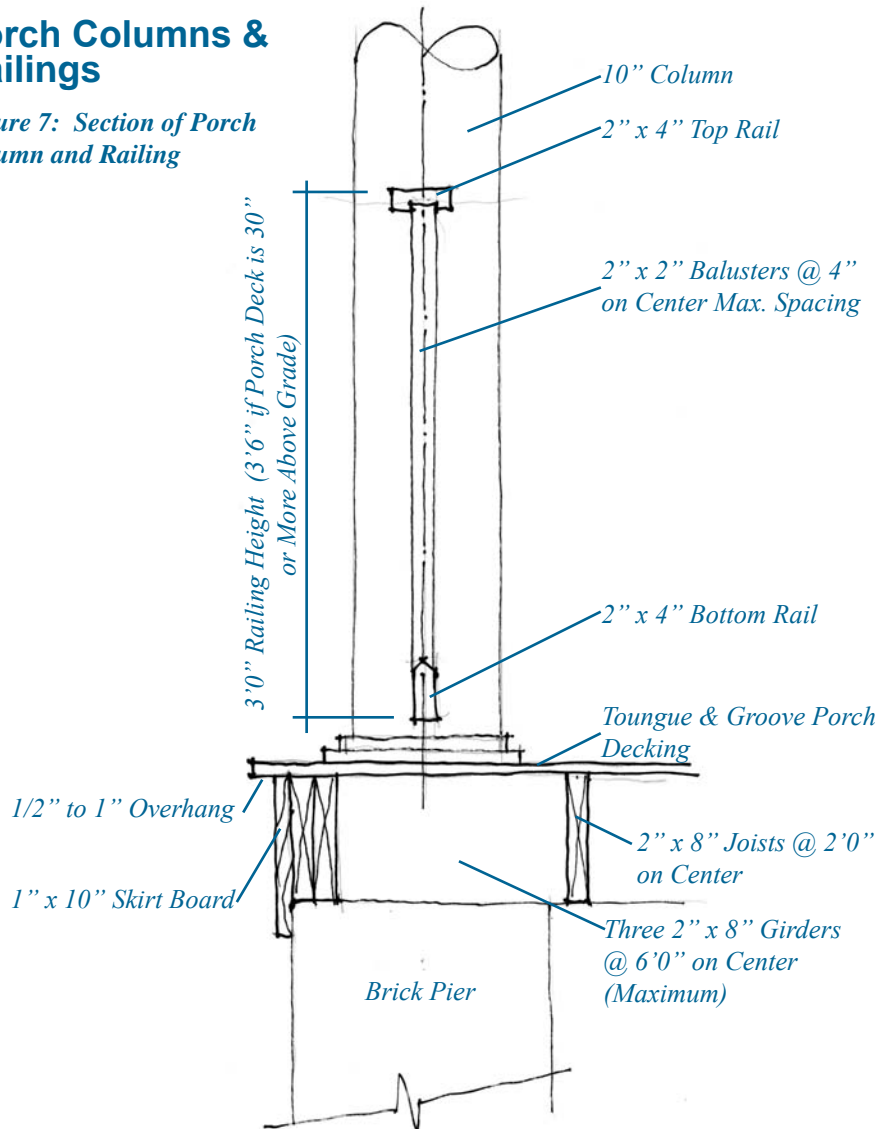


The porch roof structure is constructed of either wood trusses or conventional roof *rafters* with ceiling joists. The porch roof structure is made up of a top chord (rafter) at the slope of the roof and a bottom chord (ceiling joist) which is horizontal and is the support for the porch ceiling. The roof structure bears on the porch beam or *entablature* (see description below) which extends along the front and two sides of the porch. The roof structure then extends up to and is anchored to the exterior wall of the house. The bottom chord or ceiling joist, of the roof structure extends beyond the beam (entablature) approximately one foot to form the porch roof overhang or eave. The eave of the porch roof consists of a fascia which is a vertical trim board extending along the edge of the porch roof and anchored to the end of the porch top (and sometimes bottom) chord, and a *soffit* which is anchored to the underside of the bottom chord where it extends beyond the beam (entablature). The last component of the porch roof is the porch ceiling which is anchored to the bottom of the bottom chord of the porch roof structure.

The porch entablature (beam), which supports the roof structure, is either a box beam construction or two to three heavy wood members, usually 2" by 10" or 2" x 12" boards anchored together. Either beam assembly is then wrapped with trim boards on each side and along the bottom. A porch with an omitted, hidden, or undersized entablature creates an unstable appearance.

Porch Columns & Railings

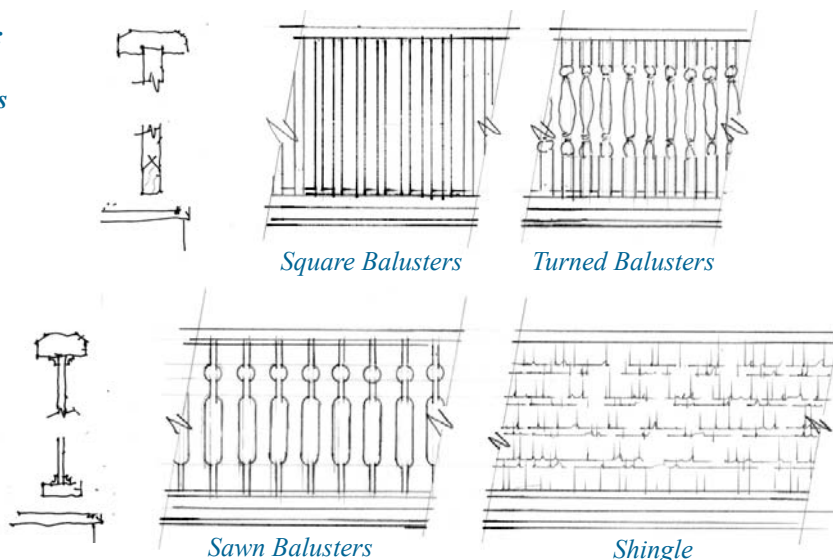
Figure 7: Section of Porch Column and Railing



The porch *columns* provide the support for the porch roof beam (*entablature*), which supports the roof structure. Seen as decorative elements of the porch assembly, they take on many forms, from the smooth round Doric columns to the fluted round Corinthian columns with elaborate *capitals* to the intricate *turned wood* columns, to the tapered square box columns. They extend from the entablature to the porch deck and are supported by the porch deck beam below the porch deck.

Porch railings provide safety and some degree of privacy. The railing, anchored to the columns at each end, consists of a top rail, a bottom rail, and vertical balusters (pickets) anchored to the top and bottom rails. Like the columns, the rail systems are a decorative element of the porch and range in shape from decorative turned wood components, to sawn balusters, to simple square wood elements.

Figure 8: Baluster Examples

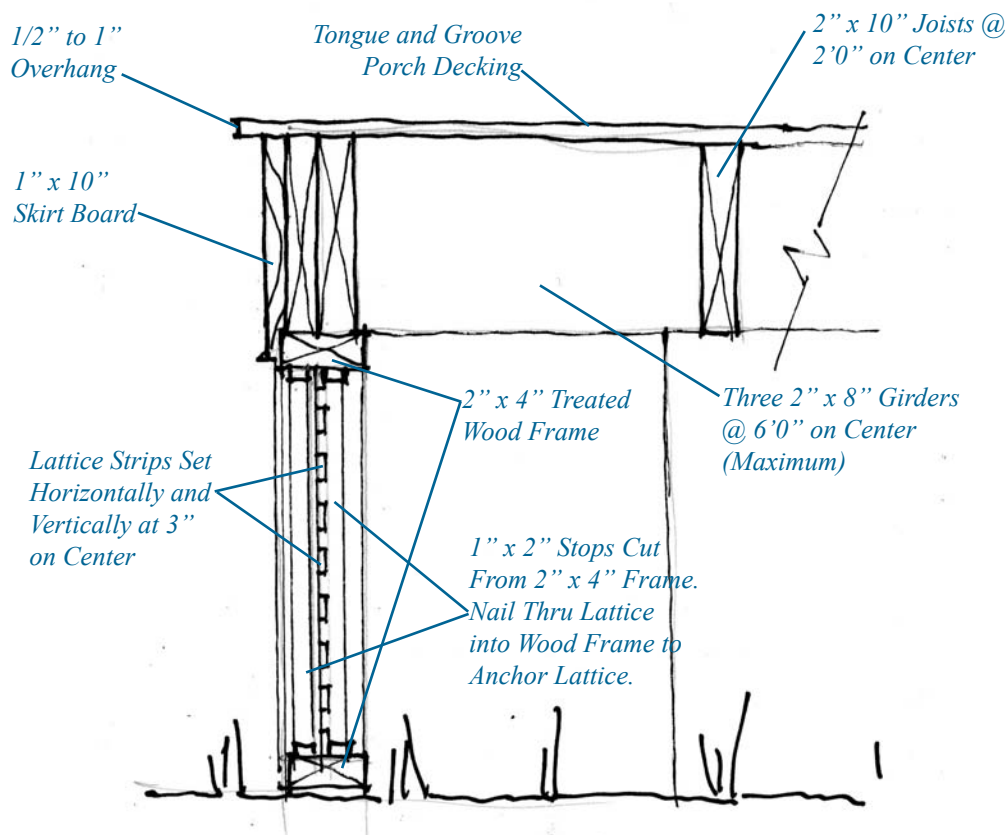


Porch Deck and Lattice

The porch deck structure is composed of treated wood girders and joists. The wood girders, usually several heavy wood members anchored together, are anchored to the house's exterior wall and then extend to and are supported at the porch's perimeter by piers. The wood joists are single heavy wood members, usually 2" by 10" or 2" by 12" boards, extending between and anchored to the girders. Wood (not pressure treated) or synthetic tongue and groove decking is then anchored to this system to form the porch floor. Vertically oriented 1 inch x 2 inch strips can also be used in Traditional neighborhoods where the porch deck is fairly low (less than 3 feet). The decking should overhang at least one inch beyond the skirt board to create a shadow line. A finished wood skirt board is attached to the front and sides of the porch structure (girders). The porch piers provide the final support member for the porch. They are usually constructed of brick and are located below each column location. The piers extend below grade to a concrete footing.

Lattice is installed in the opening created between the piers and between the bottom of the skirt board and the ground. The lattice assembly consists of a treated wood frame anchored to the piers at each side and to the bottom of the girder at its top. Lattice is then installed in a vertical/horizontal grid pattern and anchored to the treated wood lattice frame.

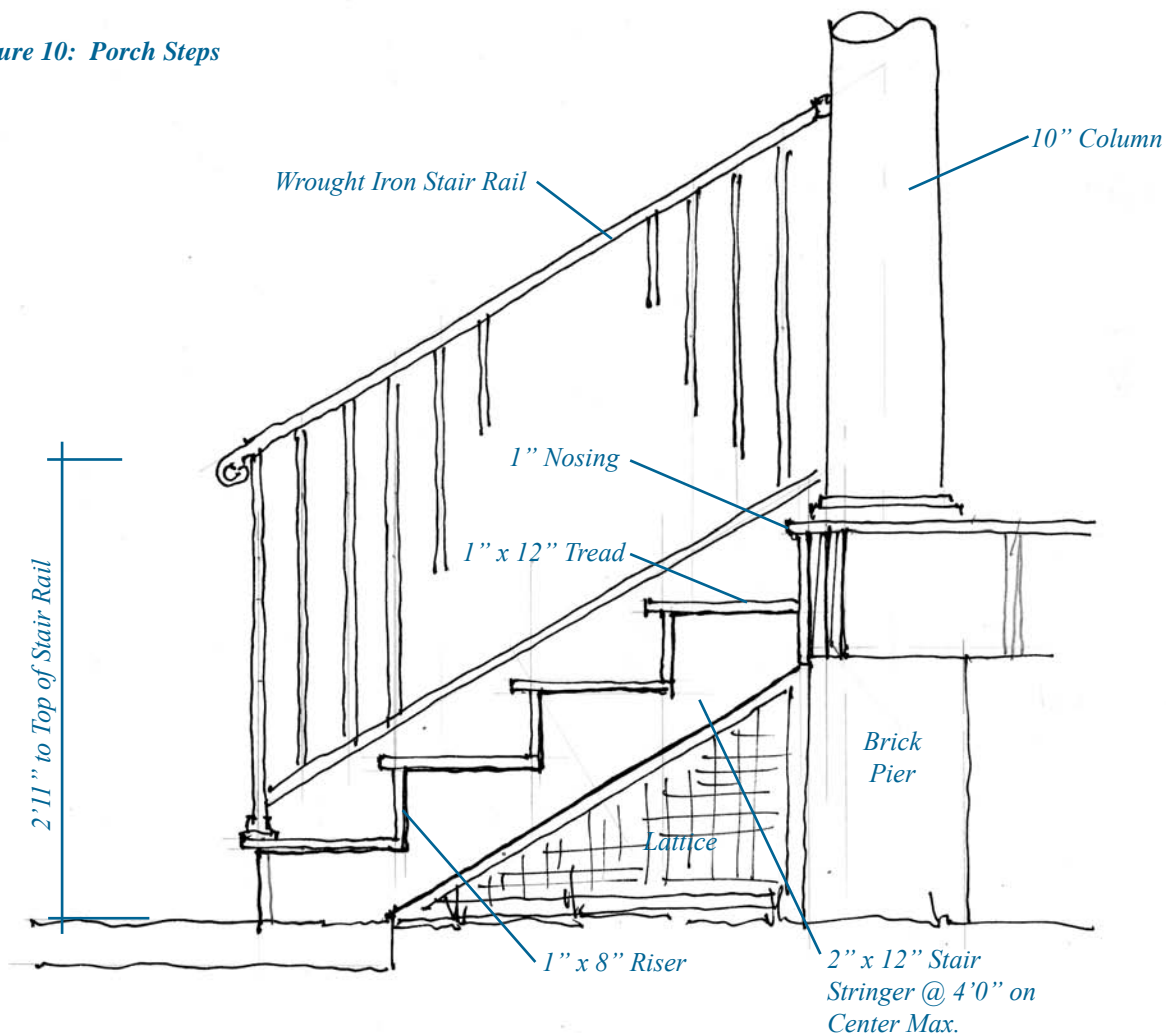
Figure 9: Porch Deck and Lattice



Porch Steps

The last item of a front porch is the porch steps. This assembly consists of stringers which are heavy treated wood member cut to form the horizontal (tread) and vertical (riser) notches of the stair assembly. The risers are located at each edge of the stair assembly (sometimes, with wide stairs, a middle riser is added). They are anchored to the porch girder at the top and bear on a concrete footing or paved walkway at the bottom. Heavy wood members are then anchored to the horizontal notch of the stringer to form the stair treads. Wood members are then anchored to the vertical notch of the stringers to form the closed risers. Risers should never be left uncovered. Where the porch steps consist of three or more risers, it is advisable to provide porch railing on either side of the stairs. The railing, typically made of wood or wrought iron, is anchored to the column at the top and the bottom tread or walkway at the bottom.

Figure 10: Porch Steps



***Painting.** All exposed wood and iron members of the porch assembly described above should be painted using an alkyd-based primer and two topcoats of either an alkyd-based or latex-based top coat. Porch decking should receive a decking paint for its top coats.